INPUT

X

CRAY

CUSTOMER SATISFACTION SURVEY

REPORT OF FINDINGS

APRIL 24, 1986

By

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INPUT
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CRI OBJECTIVE

ESTABLISH CRI AS THE
STANDARD OF VALUE

FURTHER STRENGTHEN CRI BY:
USING CUSTOMER SATISFACTION AS A
PRIMARY COMPETITIVE EDGE

METHOD:
CONDUCT CUSTOMER SATISFACTION SURVEY
TO IDENTIFY ATTITUDES/CONCERNS

OUTCOME:
IDENTIFY STEPS TO ENHANCE
CUSTOMER SATISFACTION

PURPOSE OF SURVEY

- ACCURATELY UNDERSTAND CURRENT ATTITUDES
- ESTABLISH BASE LINE FOR FUTURE SURVEYS

SURVEY SCOPE

KEY ISSUES

- HARDWARE AND SOFTWARE
  - AVAILABILITY/RELIABILITY
  - SATISFACTION WITH SUPPORT
  - DIAGNOSTICS
  - INSTALLATION SERVICE
  - TRAINING
- DECISION CRITERIA
- DOING BUSINESS WITH CRI
  - RESPONSIVENESS
  - POLICIES
  - INTERACTION WITH SENIOR MANAGEMENT
- LIKELIHOOD BUY ANOTHER CRAY

METHODOLOGY

USA CUSTOMERS ONLY

42 SITES

45 INTERVIEWS

18 ON-SITE INTERVIEWS

27 TELEPHONE INTERVIEWS

RESPONDENTS: PERSON(S) MOST LIKELY TO:

- INFLUENCE NEXT SUPERCOMPUTER ACQUISITION
- BE MOST KNOWLEDGEABLE OF CRI PERFORMANCE

STANDARD QUESTIONNAIRE

COMMENTS ACTIVELY ENCOURAGED

SURVEY DURATION

- ON-SITE
  - DURATION
    - AVERAGE: 1 HOUR 15 MINUTES
    - RANGE: 45 MINUTES TO 2 HOURS
- TELEPHONE
  - DURATION
    - AVERAGE: 40 MINUTES
    - RANGE: 20 TO 90 MINUTES

RESPONDENT ATTITUDES

- WANTED ASSURANCE SURVEY WAS CRI AUTHORIZED
- GENEROUS WITH THEIR TIME
- CANDID IN THEIR REPLIES
- APPRECIATED BEING INTERVIEWED

CUSTOMERS INTERVIEWED

ORGANIZATION	RESPONDENT
AIR FORCE GLOBAL WEATHER	JAMES WILSON
AIR FORCE WEAPONS LAB	BILL SNELL
ARCO	JOHN COMAN CHARLES MURPHY
ARNOLD ENGINEERING DEV. CENTER	JOE SURICO
AT&T BELL LABS	PETE NELSON
BOEING COMPUTER SERVICES	ROBERT SPIELMAN
CHEVRON GEOSCIENCES	BILL BARTZ
CHEVRON OIL FIELD RESEARCH	JIM SIMPSON
CDC/UNITED INFORMATION SERVICES	NATE LOSAPIO
DIGITAL PRODUCTIONS	JIM DAVIS
E. I. DUPONT	JOHN TAYLOR
EXXON PRODUCTION RESEARCH	DAN TURNER
EXXON/USA	DEAN MILLER
FAIRCHILD	CARLSO D'ANGELO
FORD	ROBERT HEINEY
GA TECHNOLOGIES	SID KARIN
GENERAL DYNAMICS	JIM MATOUS BILL GRIFFIN
GENERAL MOTORS	DEAN HAMMOND
GRUMMAN AEROSPACE	JOHN WITTE
LAWRENCE LIVERMORE NAT. LAB.	BOB BORCHERS
LOCKHEED ADV. AERONAUTICS	HAROLD WEINBERGER
LOCKHEED MISSILES AND SPACE	DOUG TELFORD
LOS ALAMOS NAT. LAB.	NORMAN MORSE BILL BUZBEE
MOBIL EXPLORATION	HAROLD DAVID
NASA LEWIS RESEARCH	PEG YOHNER
NASA AMES	F. R. BAILEY MARCIE SMITH
NATIONAL CENTER FOR ATMOSPHERIC RESEARCH	PETER GILMAN
NATIONAL MAGNETIC FUSION ENERGY	JOHN KILEEN MARILYN RICHARDS
NAVAL RESEARCH LAB.	RUDI SAENGER DORIS GOSSETT HARVEY BROCK
OAK RIDGE NAT. LAB.	CHARLES ALLEN
PHILLIPS PETROLEUM	COLIN WILKINSON
REI (UNIV. OF MINN.)	JOHN SELL
ROCKWELL	DAN PARCEL ABRAHAM LEVINE
SANDIA NAT. LAB., CA	STEVE BINKLEY
SANDIA NAT. LAB., NM	E. K. MONTOYA
SCHLUMBERGER	ROBERT SNOW
SHELL OIL	LARRY KEALY CLINT BRISCOL CARL SMITH
STANDARD OIL	RON KOEHLER
SUN EXPLORATION	JOE SHARP MAYNARD REDEKER
UNIVERSITY OF ILLINOIS	SANDY MOY
WESTINGHOUSE	JIM KASDORF BOB PRICE
WRIGHT PATTERSON AFB	DEMETRIUS ZONARS

SURVEY DATA BASE

- ALL NUMERICAL QUESTIONS IN COMPUTER
  DATA BASE AND HARD COPY
- ALL TEXT REPLIES AVAILABLE ON HARD COPY
- SELECTED TEXT IN COMPUTER DATA BASE
- DBASE III AND ABSTAT SOFTWARE (IBM PC)
- HARD COPY AVAILABLE VIA:
  - GOVERNMENT VS COMMERCIAL
  - MODEL TYPE
  - OPERATING SYSTEM TYPE
  - REGION
  - EXTENT OF USAGE

RATING SCALES

RESPONDENTS OFTEN ASKED TO

RATE THEIR ATTITUDES

SCALE = 1 TO 10

1 = LOW

10 = HIGH

-

RESPONDENTS GIVEN NO FURTHER

DESCRIPTION OF RATING VALUES

GENERALLY YOU SHOULD EVALUATE RESPONSES

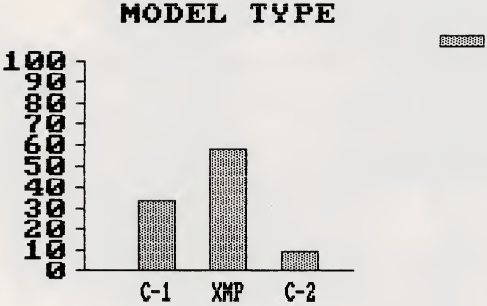
AS FOLLOWS:

9 – 10 = EXCELLENT

7 – 8 = GOOD

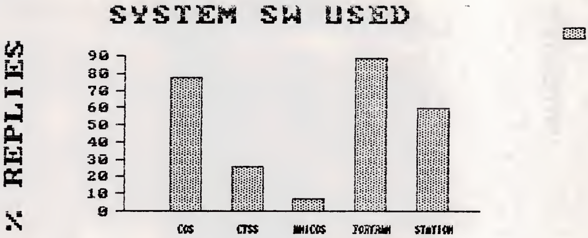
5 – 6 = FAIR

1 – 4 = POOR



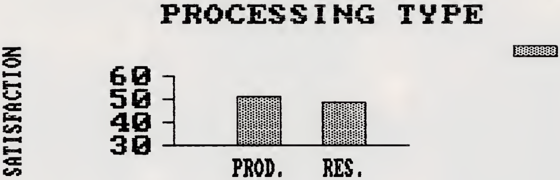
Q1A: MODEL TYPE

MODEL TYPE	PERCENT
C-1	33.3
XMP	57.8
C-2	8.9



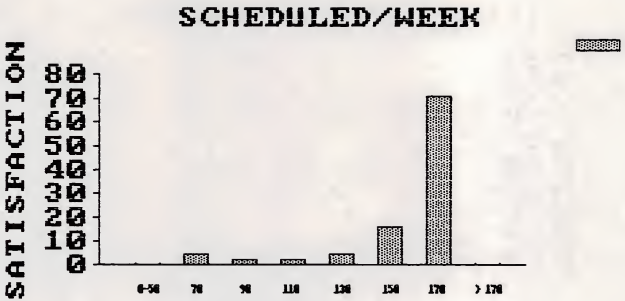
Q12: SYSTEM SOFTWARE USED (Q12)

TYPE	% TOTAL	# CASES
COS	77.3	34
CTSS	25.6	11
UNICOS	6.8	3
FORTRAN	88.6	39
STATION	59.5	25



Q1F: PROCESSING TYPE

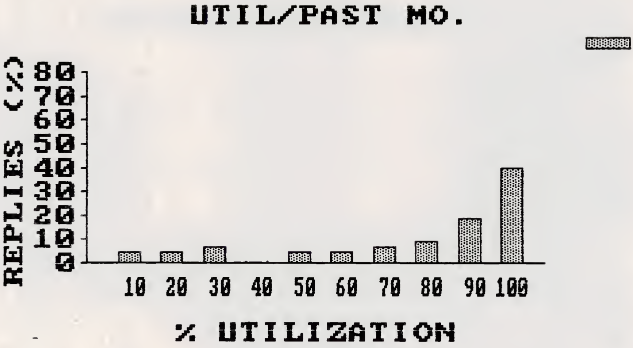
PROCESSING TYPE	%	DESCRIPTION
PROD.	51.1	PRODUCTION
RES.	48.9	RESEARCH



Q3: SCHEDULED/WEEK

SCH/WEEK	PERCENT	MEAN	MIN	MAX	STD.DEV.	DESCRIPTION
0-50	0					UNDER 50 HOURS/WEEK
70	4.4					51-70 HOURS/WEEK
90	2.2					71-90 HOURS/WEEK
110	2.2					91-110 HOURS/WEEK
130	4.4					111-130 HOURS/WEEK
150	15.6					131-150 HOURS/WEEK
170	71.2					151-170 HOURS/WEEK
> 170	0					OVER 170 HOURS/WEEK

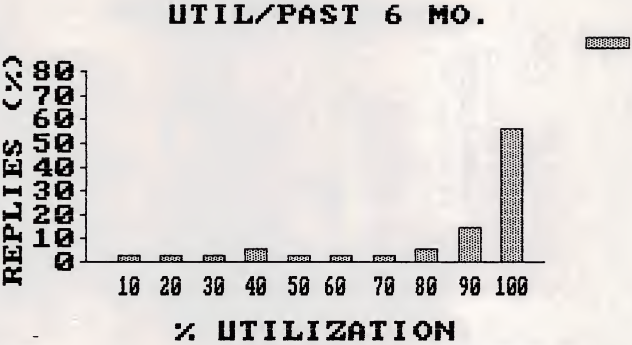
TOTAL	100	150.4	50	168	28	



Q4: UTILIZATION / PAST MONTH

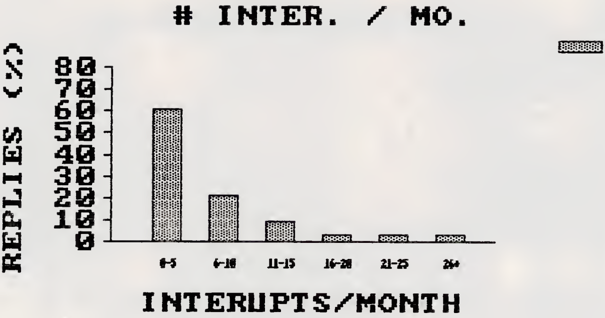
% UTILIZATION	% TOTAL	MEAN	MIN	MAX	STD. DEV.	# CASES
10	4.7					
20	4.7					
30	6.9					
40	0					
50	4.7					
60	4.7					
70	6.9					
80	9.3					
90	18.6					
100	39.5					

TOTAL	100	75.2	10	100	28.4	43



Q4: UTILIZATION / PAST 6 MONTHS

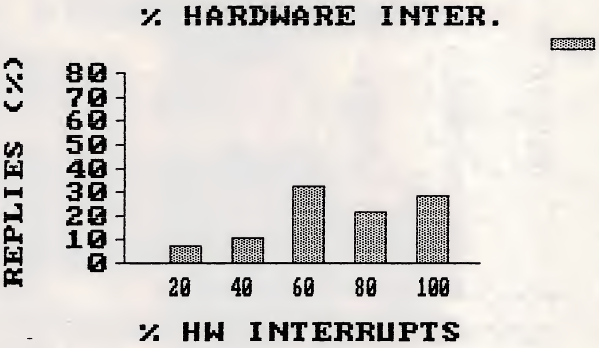
% UTILIZATION	% TOTAL	MEAN	MIN	MAX	STD.DEV.	# CASES
10	2.9					
20	2.9					
30	2.9					
40	5.9					
50	2.9					
60	2.9					
70	2.9					
80	5.9					
90	14.8					
100	56					
TOTAL	100	81	10	100	26.7	34



Q6: INTERUPTIONS / MONTH

INTER/MO.	% TOTAL	MEAN	MIN	MAX	STD. DEV.	# CASES
0-5	60.8					
6-10	21.2					
11-15	9					
16-20	3					
21-25	3					
26+	3					

TOTAL	100	8.5	1	75	13.1	33



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Q6A: % HARDWARE INTERRUPTIONS

% HARD. INTER % TOTAL  MEAN MIN MAX STD.DEV CASES DESCRIPTION
    20          7.1                                0 TO 20
    40         10.8                               21 TO 40
    60         32.1                               41 TO 60
    80         21.4                               61 TO 80
    100        28.6                               81 TO 100
              -----
   TOTAL        100    66.3 11  100    27     28
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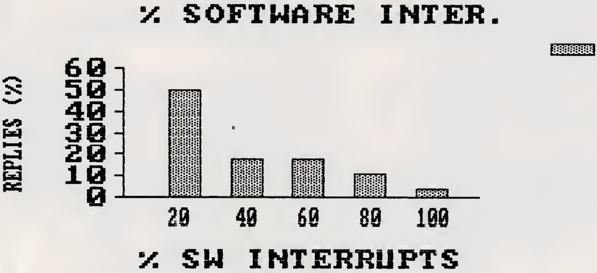

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Q6B: % SOFTWARE INTERRUPTIONS

% SW._INTR. % TOTAL MEAN MIN MAX STD.DEV. CASES DESCRIPTION
   20         50                                    0 TO 20
    40       17.8                                 21 TO 40
    60       17.8                                 41 TO 60
    80       10.8                                 61 TO 80
   100       3.6                                  81 TO 100
             -----
  TOTAL      100     30.1  0  89   28.1     28
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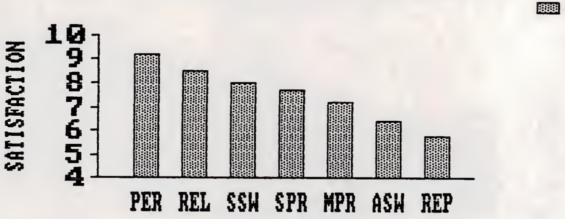
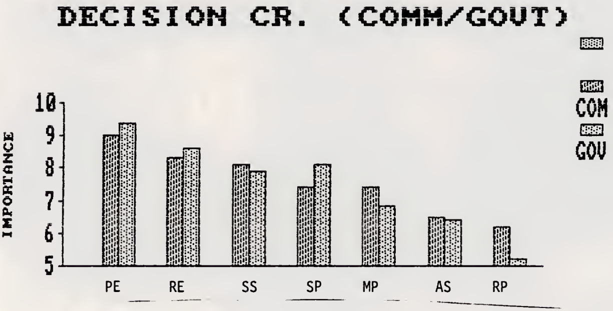
DECISION CRITERIA



Q2: DECISION CRITERIA

CODE	MEAN	MIN	MAX	STD. DEV.	DESCRIPTION
PER	9.2	6.0	10.0	1.1	OVERALL SYSTEM PERF.
REL	8.5	3.0	10.0	1.6	SYSTEM RELIABILITY
SSW	8.0	1.0	10.0	2.0	AVAIL. OF SYS. SW
REP	5.8	1.0	10.0	3.0	VENDOR MAINT. REP.
SPR	7.7	4.0	10.0	1.6	OVERALL SYSTEM PRICE
MPR	7.2	3.0	10.0	1.8	MAINT. PRICE
ASW	6.4	3.0	10.0	1.8	AVAIL. OF APPL. SW



Q2: DECISION CRITERIA (COMMERCIAL/GOVERNMENT)

FACTOR	MEAN	MIN	MAX	STD.DEV.	DESCRIPTION
PER	9.2	6.0	10.0	1.1	OVERALL SYSTEM PERF.
REL	8.5	3.0	10.0	1.6	SYSTEM RELIABILITY
SSW	8.0	1.0	10.0	2.0	AVAIL. OF SYS.SW
REP	5.8	1.0	10.0	3.0	VENDOR MAINT. REP.
SPR	7.7	4.0	10.0	1.6	OVERALL SYSTEM PRICE
MPR	7.2	3.0	10.0	1.8	MAINT. PRICE
ASW	6.4	3.0	10.0	1.8	AVAIL. OF APPL. SW

BY COM RANK

BY COMBINED RANKING

FACTOR	TOT	COM	GOV
PER	9.2	9.0	9.4
REL	8.5	8.3	8.6
SSW	8.0	8.1	7.9
REP	5.8	6.2	5.2
SPR	7.7	7.4	8.1
MPR	7.2	7.4	6.8
ASW	6.4	6.5	6.4

BY COMMERCIAL RANKING

FACTOR	C	G
PER	9.0	9.4
REL	8.3	8.6
SSW	8.1	7.9
SPR	7.4	8.1
MPR	7.4	6.8
ASW	6.5	6.4
REP	6.2	5.2

	PE	RE	SS	SP	MP	AS	RP
COM	9.0	8.3	8.1	7.4	7.4	6.5	6.2
GOV	9.4	8.6	7.9	8.1	6.8	6.4	5.2

COMMENTS REGARDING DECISION CRITERIA

"EASE OF CONVERTING IS VERY IMPORTANT"

"COMPATABILITY IS VERY IMPORTANT"

"THOUGHPUT AND COMPATABILITY IS KEY"

"AVAILABILTY OF SYSTEMS SOFTWARE WILL BE ESPECIALLY IMPORTANT"

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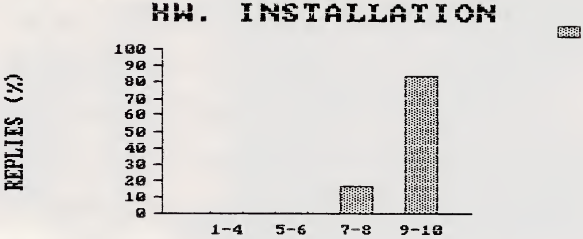
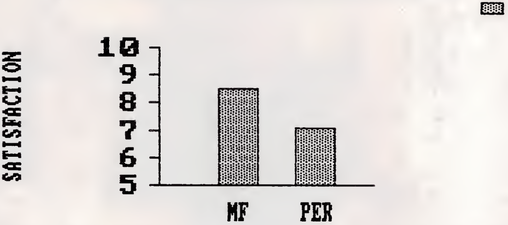


Q19: HARDWARE INSTALLATION

RATING	% TOT.	# CASES	MEAN	MIN.	MAX.	STD.DEV.
1-4	0	0				
5-6	0	0				
7-8	16.3	7				
9-10	83.7	36				
TOTAL	100.0	43	9.4	7	10	.9

HW SATISFACTION



Q9: MAINFRAME AVAILABILITY/RELIABILITY

CODE	MEAN	MIN	MAX	STD. DEV.	CASES	DESCRIPTION
MF	8.5	2	10	1.8	44	MAINFRAME AVAILABILITY/RELIABILITY
PER	7.1	2	10	1.8	42	PERIPHERAL AVAILABILITY/RELIABILITY

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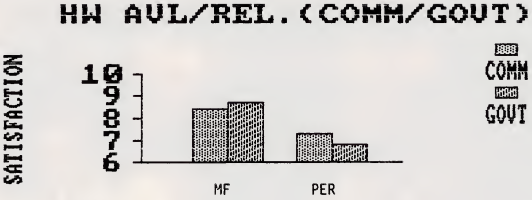

Q9: HARDWARE AVAILABILITY/RELIABILITY (COM/GOV AND BY MODEL)

CODE	MEAN	MIN	MAX	STD.DEV.	CASES	DESCRIPTION
MF	8.5	2	10	1.8	44	MAINFRAME AVAIL./RELIABILITY
PER	7.1	2	10	1.8	42	PERIPHERAL AVAIL./RELIABILITY

	MF	PER
COMM	8.4	7.3
GOVT	8.7	6.8

	MF	PER
C1	8.3	7
XMP	8.7	7.4

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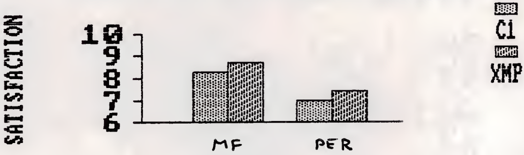
HW AVL/REL.(BY MODEL)

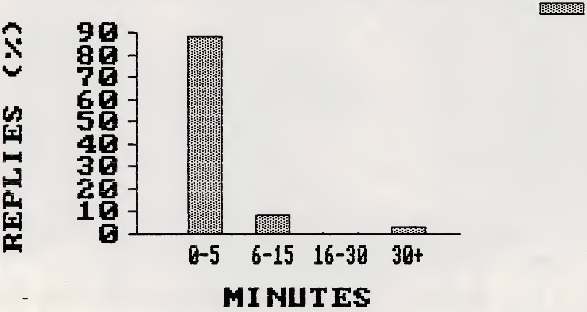


Q9: HARDWARE AVAILABILITY/RELIABILITY (COM/GOV AND BY MODEL)

CODE	MEAN	MIN	MAX	STD.DEV.	CASES	DESCRIPTION
MF-	8.5	2	10	1.8	44	MAINFRAME AVAIL./RELIABILITY
PER	7.1	2	10	1.8	42	PERIPHERAL AVAIL./RELIABILITY

	MF	PER
COMM	8.4	7.3
GOVT	8.7	6.8

	MF	PER
C1	8.3	7
XMP	8.7	7.4

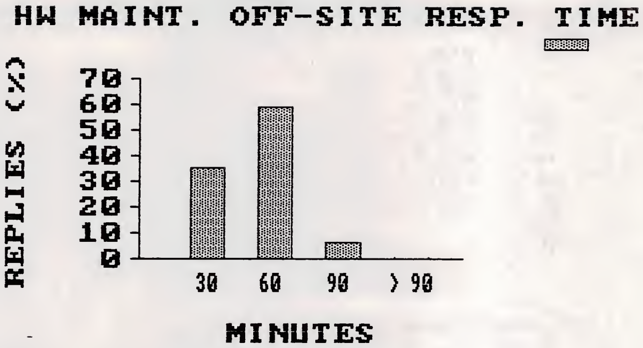


HW MAINT. ON-SITE RESP. TIME

Q7A: HARDWARE MAINTENANCE ON-SITE RESPONSE TIME

HW ON-SITE RESP. TIME	% TOTAL	MEAN	MIN	MAX	STD.DEV.	# CASES
0-5	88.5					
6-15	8.6					
16-30	0					
30+	2.9					

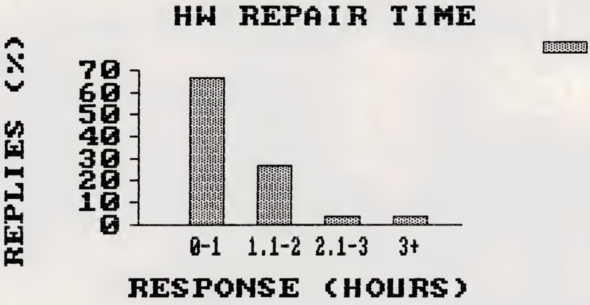
TOTAL	100	6.4	1	60	10	35



Q7B: HARDWARE MAINTENANCE OFF-SITE RESPONSE TIME

RESP. TIME	% TOTAL	MEAN	MIN	MAX	STD.DEV.	# CASES	DESCRIPTION
30	35.2						0 TO 30
60	58.9						31 TO 60
90	5.9						61 TO 90
) 90	0						OVER 90

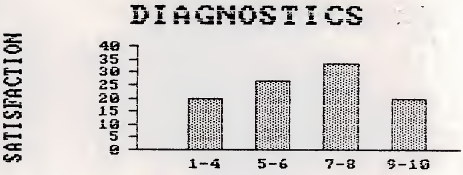
TOTAL	100	44.7	10	75	17.7	17	



Q8: HARDWARE REPAIR TIME

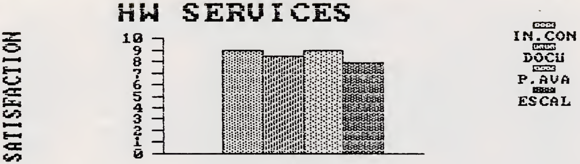
HW REPAIR TIME	% TOTAL	MEAN	MIN	MAX	STD.DEV.	# CASES
0-1	66.7					
1.1-2	26.7					
2.1-3	3.3					
3+	3.3					

TOTAL	100	1.2	.3	3.5	.8	30



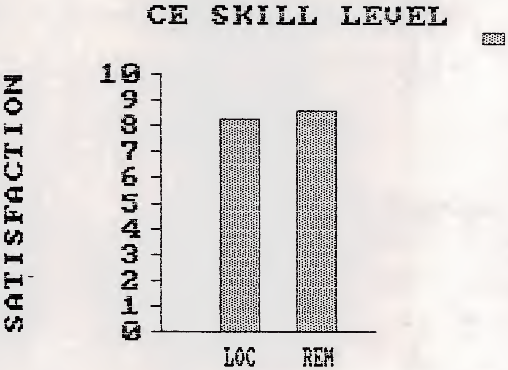
Q10A: DIAGNOSTICS QUALITY

RATING	% TOT.	# CASES	MEAN	MIN.	MAX.	STD.DEV.
1-4	20	6				
5-6	26.7	8				
7-8	33.3	10				
9-10	20	6				
TOTAL	100.0	30	6.5	2	10	2.3



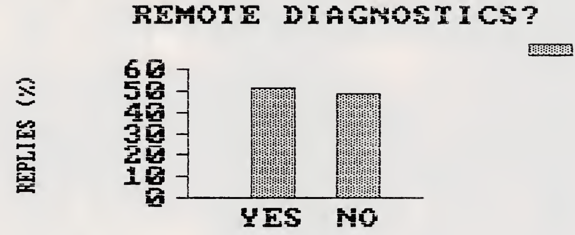
Q11AD: HW SERVICES (Q11AD)

CODE	MEAN	MIN	MAX	STD.DEV.	# CASES	DESCRIPTION
IN.CON	8.9	4	10	1.5	31	HARDWARE INSTALLATION
DOCU	8.5	7	10	1	21	HARDWARE DOCUMENTATION
P.AVA	8.9	4	10	1.2	34	PARTS AVAILABILITY
ESCAL	7.9	4	10	1.9	32	HARDWARE ESCALATION PROCEDURES



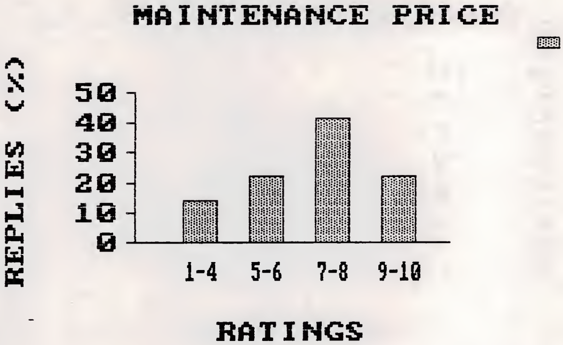
Q11EF: CUSTOMER ENGINEER SKILL LEVEL RATINGS

CODE	MEAN	MIN	MAX	STD.DEV.	# CASES	DESCRIPTION
LOC	8.3	5	10	1.1	37	
REM	8.6	7	10	.9	23	



Q20A: REMOTE DIAGNOSTICS

RATING	% TOT.	# CASES
YES	51.4	19
NO	48.6	18
TOTAL	100	37



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Q22B: MAINTENANCE PRICE

CODE     % TOTAL # CASES  MEAN  MIN  MAX  STD.DEV.

1-4          14       5
5-6        22.2       8
7-8        41.6      15
9-10       22.2       8

TOTAL       100      36   6.8    2   10       2.2
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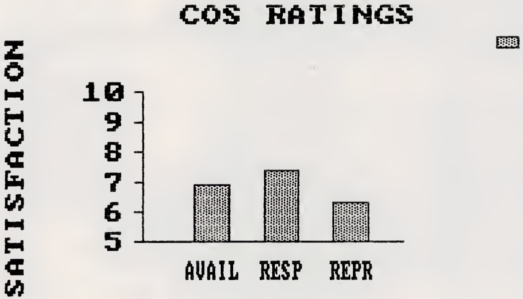
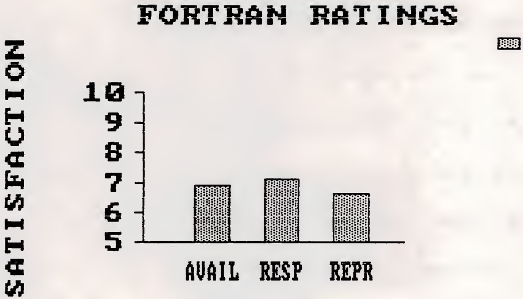


Q15: OPER. SYS. RATINGS

CODE	MEAN	MIN	MAX	STD. DEV.	DESCRIPTION
AVAIL	6.9	2	10	1.9	OS AVAILABILITY/RELIABILITY
RESP	7.4	2	10	1.9	OS MAINT. RESPONSE TIME RATING
REPR	6.3	2	9	1.6	OS MAINT. REPAIR TIME RATING



Q15. FORTRAN RATINGS (Q15)

CODE	MEAN	MIN	MAX	STD. DEV.	DESCRIPTION
AVAIL	6.9	2	10	1.8	FORTRAN AVAIL./REL.
RESP	7.1	2	10	2	FORTRAN MAINT. RESP. TIME
REPR	6.6	2	9	1.8	FORTRAN MAINT. REPAIR TIME

FORTRAN COMMENTS

"FORTRAN 1.1.5 HAS DROPPED IN QUALITY
IN THE PAST YEAR"

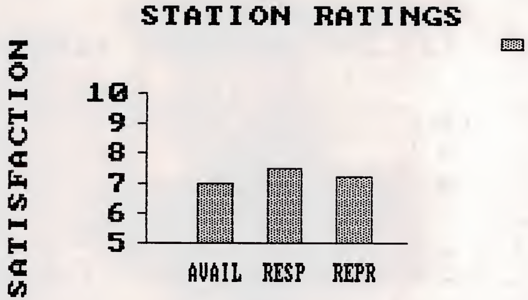
"CFT IS A NIGHTMARE"

"CFT IS A SHAKY PIECE OF SOFTWARE"

"WE FEEL NO ONE IS LISTENING
TO US REGARDING CFT"

"CAN'T GET ANY ATTENTION AT CRI HQ
REGARDING FORTRAN"

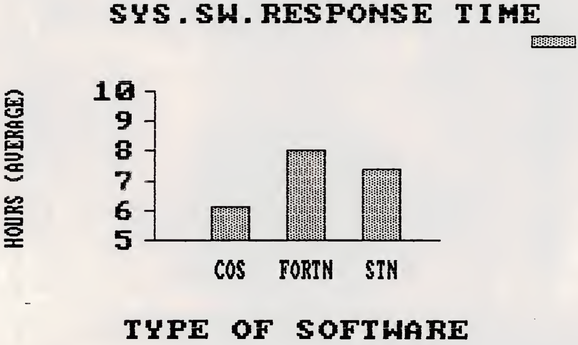
"FORTRAN IS A MEMORY HOG"



Q15. STATION RATINGS (Q15)

CODE	MEAN	MIN	MAX	STD. DEV.	# CASES	DESCRIPTION
AVAIL	7	4	9	1.5	23	STATION AVAIL./REL.
RESP	7.5	3	10	1.8	20	STATION MAINT. RESP. TIME
REPR	7.2	3	10	1.6	22	STATION MAINT. REPAIR TIME

C. Q13AGRAPH



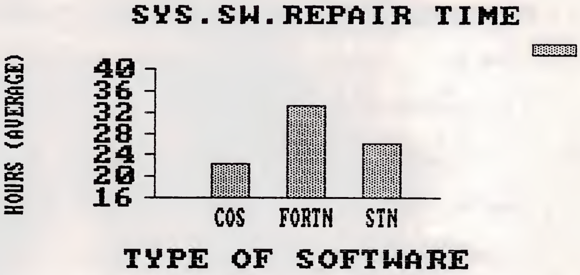
C. Q13ADATA

Q13A: SYSTEMS SOFTWARE RESPONSE TIME

TYPE	MEAN	MIN.	MAX.	CASES	DESCRIPTION
COS	6.1	.1	40	17	COS
FORTN	8	.1	80	17	FORTRAN
STN	7.4	.1	40	10	STATION

Apr 28, 1986 1:04 PM(C.Q14WORKSHEET) SYS.SW.REPAIR TIME WORKSHEET

C.Q14GRAPH



C.Q14DATA

Q14: SYSTEMS SOFTWARE REPAIR TIME

TYPE	MEAN	MIN.	MAX.	CASES	DESCRIPTION
COS	22.2	2	48	11	COS
FORTN	33.3	2	160	11	FORTRAN
STN	26.2	2	48	9	STATION

SOFTWARE RESPONSE/REPAIR COMMENTS

"TAKES MONTHS TO RESOLVE SW. PROBLEMS"

"TAKES 1 HOUR TO FOREVER TO REPAIR SW."

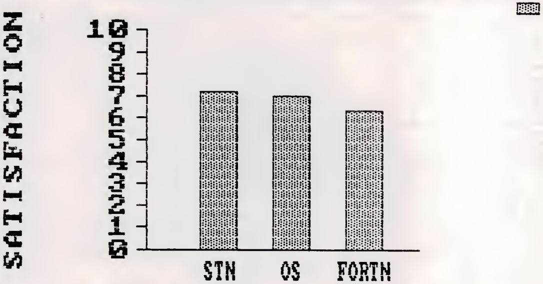
"IS RESPONSIVE TO SEVERE SW. PROBLEMS,
BUT LESS SO TO LESS URGENT ONES"

"REPAIR TIME FOR NON-CRITICAL
SW PROBLEMS IS TERRIBLE"

"DEFERRED SW PROBLEMS TAKE TOO LONG"

"CRI IS TERRIBLE REGARDS BUGS
IN INITIAL RELEASES"

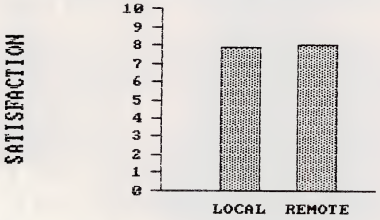
MANY CRI USERS IN CUG ARE UPSET
RE: CRI'S QUALITY ASSURANCE METHODS"



SOFTWARE ESCALATION

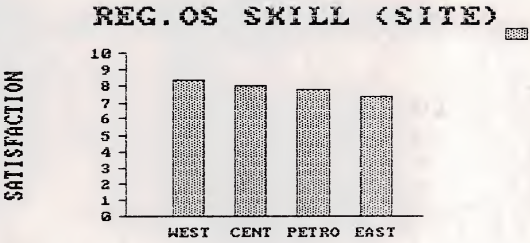
```
Q18E: SOFTWARE ESCALATION

TYPE MEAN MIN MAX STD.DEV# CASES DESCRIPTION

STN    7.2   1  10    2.1       17 STATION
OS       7   1  10    2.1       24 OPERATING SYSTEM
FORTN 6.3    1  10    2.5       19 FORTRAN
```

OS SKILL LEVELS



Q16:OS SKILL LEVEL RATINGS

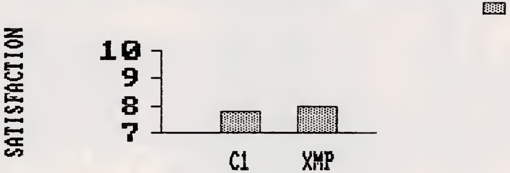
CODE	MEAN	MIN	MAX	#CASES	STD.DEV.	DESCRIPTION
LOCAL	7.9	4	10	28	1.6	LOCAL ON-SITE SOFTWARE
REMOTE	8	5	10	21	1.4	REMOTE (DIST.,REG.,HQ)



Q16:REGION OS SKILL LEVEL (ON-SITE)

REGION	MEAN	MIN	MAX	STD.DEV.	# CASES
WEST	8.4	8	10	.8	7
CENT	8	4	10	2.5	5
PETRO	7.8	5	10	1.7	11
EAST	7.4	5	8	1.3	5
TOTAL					21

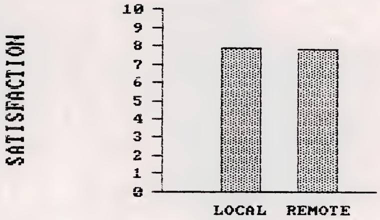
OS SKILL (SITE) BY MODEL



Q16:OS SKILL LEVEL (SITE) BY MODEL

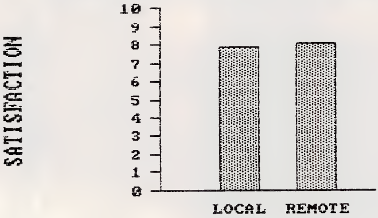
REGION	MEAN	MIN	MAX	STD. DEV.	# CASES
C1	7.8	4	10	2	9
XMP	8	5	10	1.3	19

FORTRAN SKILL LEVELS



```
Q16:FO SKILL LEVEL RATINGS

CODE        MEAN  MIN  MAX  #CASES   STD.DEV. DESCRIPTION

LOCAL        7.9    4   10       25       1.6 LOCAL ON-SITE SOFTWARE
REMOTE       7.8    3   10       17       1.6 REMOTE (DIST.,REG.,HQ)
```

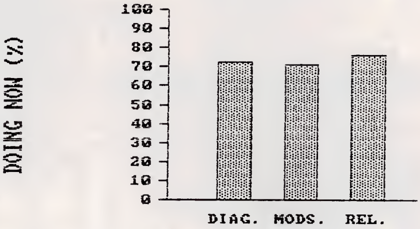
STATION SKILL LEVELS



Q16:STATION SKILL LEVEL RATINGS

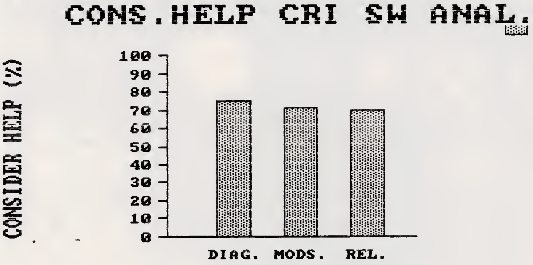
CODE	MEAN	MIN	MAX	#CASES	STD.DEV.	DESCRIPTION
LOCAL	7.9	4	10	18	1.8	LOCAL ON-SITE SOFTWARE
REMOTE	8.1	6	10	16	1	REMOTE (DIST.,REG.,HQ)

NOW HELP CRI SW ANAL.



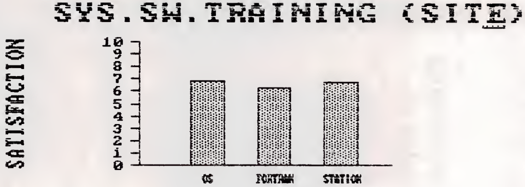
Q17: CLIENT CURRENT SW. SUPPORT TO CRI

CODE	% NOW	# CASES	DESCRIPTION
DIAG.	72.5	29	DIAGNOSE PROBLEMS
MODS.	70.7	24	INSTALLING PATCHES/MODIFICATIONS
REL.	76.2	32	INSTALLING NEW RELEASES



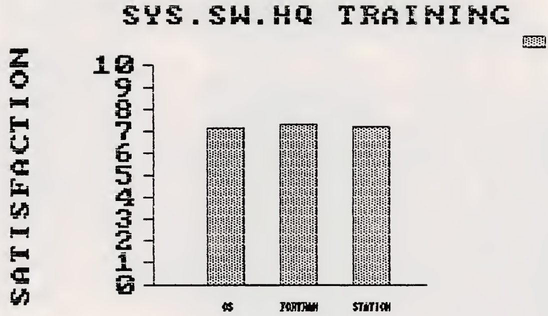
Q17: CLIENT CONSIDER HELPING CRI SOFTWARE ANALYSTS

CODE	% CONS.	# CASES	DESCRIPTION
DIAG.	75.0	24	DIAGNOSE PROBLEMS
MODS.	71.0	22	INSTALLING PATCHES/MODIFICATIONS
REL.	70.0	21	INSTALLING NEW RELEASES

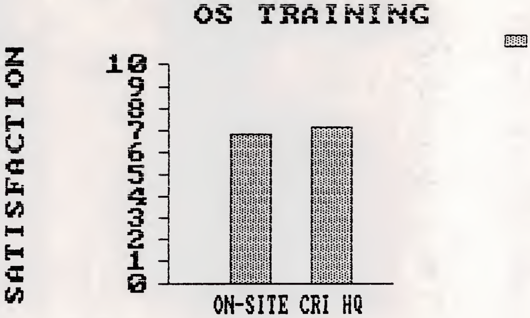


Q18B: SYSTEM SOFTWARE TRAINING AT CUSTOMER SITE

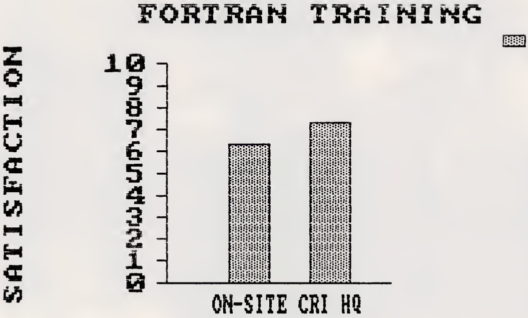
TYPE	MEAN	MIN.	MAX.	STD.DEV.	# CASES
OS	6.8	2	9	1.9	13
FORTRAN	6.3	2	8	2.1	10
STATION	6.7	2	8	1.9	9



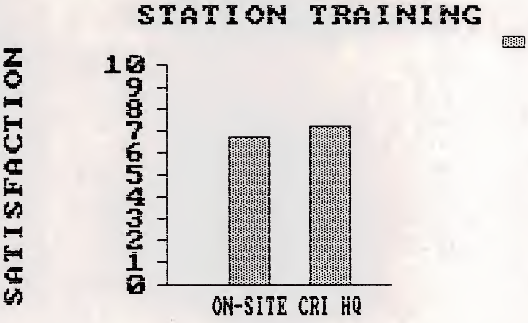
```
Q18C: SYSTEMS SOFTWARE TRAINING AT CRI HEADQUARTERS

TYPE     MEAN MIN MAX STD.DEV.# CASESDESCRIPTION

OS        7.1   3  10     1.6      23
FORTRAN  7.3   5   9     1.1      12
STATION  7.2   5   9     1.2       9
```



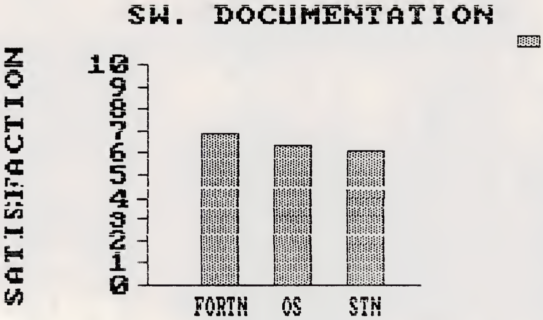
```
Q18BC: OS TRAINING

CODE      MEAN MIN MAX STD.DEV.# CASESDESCRIPTION

ON-SITE   6.8   2   9      1.9      13 OS TRAINING AT CUST.SITE
CRI HQ    7.1   3  10      1.6      23 OS TRAINING AT CRI HQ
```



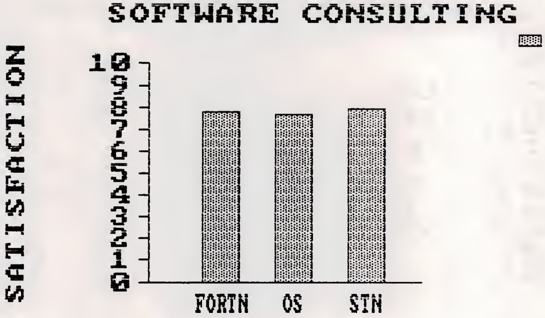
```
Q18BC: FORTRAN TRAINING

CODE      MEAN MIN MAX STD.DEV.# CASES DESCRIPTION

ON-SITE   6.3   2   8     2.1      10 FORTRAN TRAINING AT CUST.SIT
CRI HQ    7.3   5   9     1.1      12 FORTRAN TRAINING AT CRI HQ
```



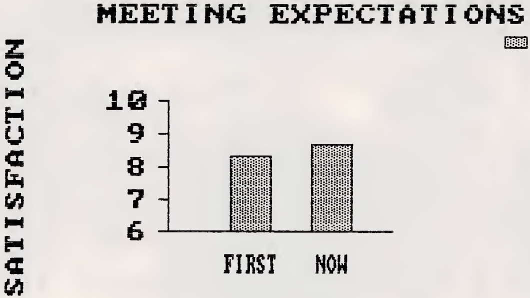
```
Q18BC: OS TRAINING

CODE      MEAN MIN MAX STD.DEV.# CASESDESCRIPTION

ON-SITE   6.7   2   8     1.9      9 STATION TRAINING AT CUST.SITE
CRI HQ    7.2   5   9     1.2      9 STATION TRAINING AT CRI HQ
```



```
Q18A: SOFTWARE DOCUMENTATION

TYPE MEAN MIN MAX STD.DEV# CASES DESCRIPTION

FORTN 6.9   4   9    1.4       23 FORTRAN
OS    6.3   4   8    1.5       24 OPERATING SYSTEM
STN   6.1   4   8    1.4       16 STATION
```

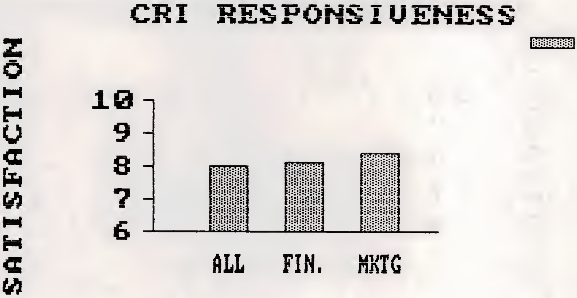


```
Q18D: SOFTWARE CONSULTING

TYPE MEAN MIN MAX STD.DEV# CASES DESCRIPTION

FORTN 7.8   5  10    1.8       36 FORTRAN
OS    7.7   4  10    1.8       30 OPERATING SYSTEM
STN   7.9   5   9    1.4       36 STATION
```



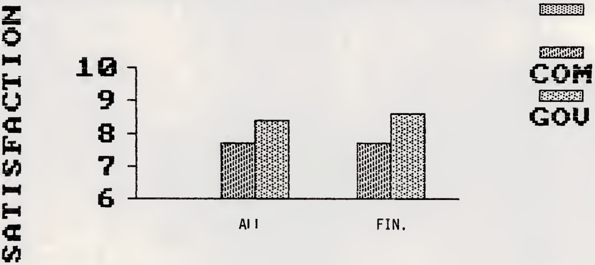
Q24: EXTENT LIVING UP TO EXPECTATIONS

CODE	MEAN	MIN	MAX	STD.DEV.	CASES
FIRST	8.3	1	10	2	45
NOW	8.7	5	10	1.3	45



```
Q21ABC: CRI RESPONSIVENESS

CODE    MEAN MIN MAX STD.DEV.CASES DESCRIPTION

ALL        8   3  10      1.8    44 TO OVERALL NEEDS
FIN.     8.1   3  10        2    41 TO FINANCIAL QUESTIONS
MKTG     8.4   5  10      1.5    41 MARKETING PERSONNEL HELPFULNESS
```

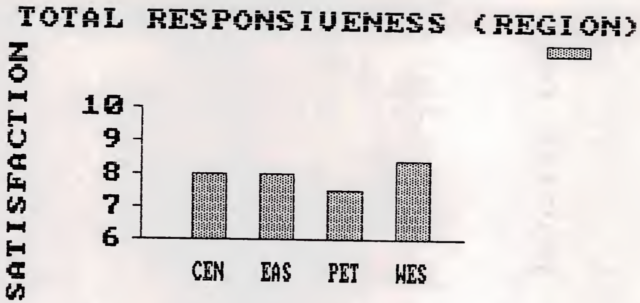
CRI RESPONSIVENESS (COM/GOV)



Q21AB : CRI RESPONSIVENESS

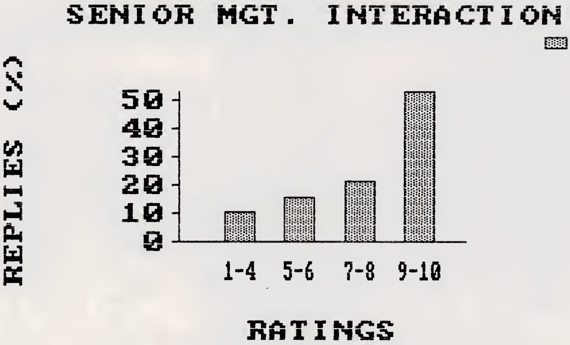
TYPE	MEAN	MIN	MAX	STD.DEV.	CASES	DESCRIPTION
ALL	8	3	10	1.8	44	TO OVERALL NEEDS
FIN.	8.1	3	10	2	41	TO FINANCIAL QUESTIONS

	ALL	FIN	STD.DEV. (ALL)	STD.DEV. (FIN)
COM	7.7	7.7	1.8	2.2
GOV	8.4	8.6	1.6	1.6



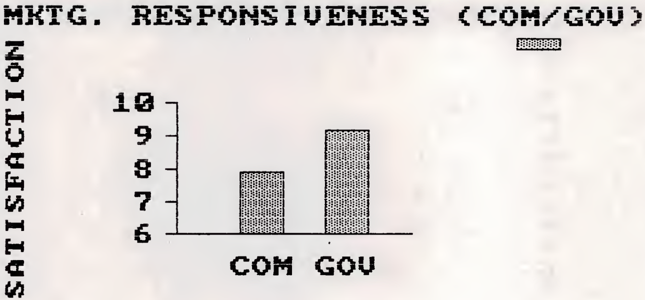
Q21A: OVERALL CRI RESPONSIVENESS (BY REGION)

REGION	MEAN	MIN.	MAX.	STD. DEV.	CASES	DESCRIPTION
CEN	8	4	10	1.9	10	CENTRAL
EAS	8	5	10	1.5	9	EASTERN
PET	7.5	3	10	2.3	11	PETROLEUM
WES	8.4	6	10	1.5	14	WESTERN
ALL	8	3	10	1.8	44	ALL REGIONS COMBINED



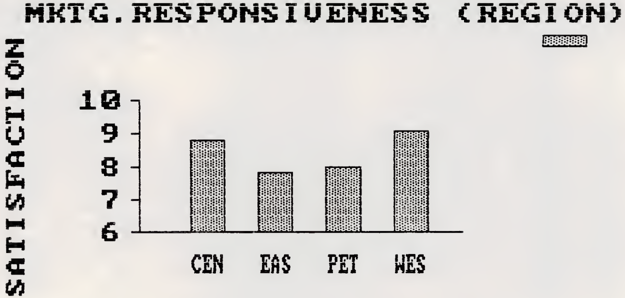
Q22C: FREQUENCY OF INTERACTION WITH CRI SENIOR MANAGEMENT

RATING	% TOTAL	# CASES	MEAN	MIN	MAX	STD. DEV.
1-4	10.4	4				
5-6	15.8	6				
7-8	21.1	8				
9-10	52.7	20				
TOTAL	100	38	7.6	1	10	2.3



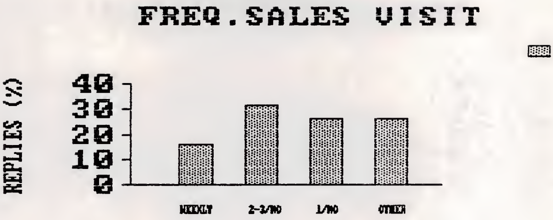
Q21C: MARKETING RESPONSIVENESS (COM/GOV)

TYPE	MEAN	MIN	MAX	STD. DEV.	CASES	DESCRIPTION
COM	7.9	5	10	1.5	24	COMMERCIAL
GOV	9.2	7	10	1	17	GOVERNMENT
ALL	8.4	5	10	1.5	41	COMBINED



Q21C: MARKETING PERSONNEL HELPFULLNESS (BY REGION)

REGION	MEAN	MIN	MAX	STD.DEV.	CASES	DESCRIPTION
CEN	8.8	6	10	1.4	8	CENTRAL
EAS	7.8	5	10	1.8	10	EASTERN
PET	8	6	10	1.4	10	PETROLEUM
WES	9.1	7	10	1.2	13	WESTERN
ALL	8.4	5	10	1.5	41	ALL REGIONS COMBINED



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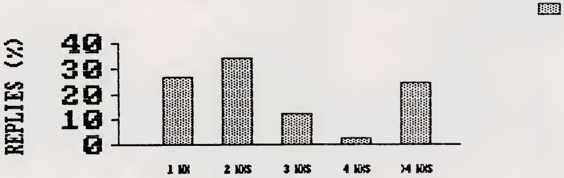
Q21D: FREQUENCY OF CRI MARKETING REP. VISITS

CLASS     % TOTAL  # CASES  DESCRIPTION

WEEKLY       15.8        6 ONCE PER WEEK
 2-3/MO      31.6       12 2 TO 3 TIMES PER MONTH
1/MO         26.3       10 ABOUT ONCE PER MONTH
OTHER        26.3       10 OTHER

TOTAL         100       38
```

TIME SINCE LAST VISIT



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Q21E: TIME SINCE LAST MARKETING REP. VISIT

CLASS      % TOTAL   # CASES  DESCRIPTION

1 WK          26.8       11
2 WKS         34.2       14
3 WKS         12.2        5
4 WKS          2.4        1
>4 WKS        24.4       10

TOTAL          100       41
```
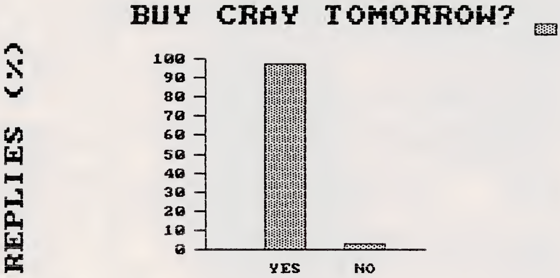

LOCAL SALES STAFF

- MOST ARE RESPONSIVE AT THE LOCAL LEVEL
- KEPT TOO ISOLATED FROM
  - CORPORATE ACTIVITIES, DECISIONS
- DON'T HAVE ENOUGH AUTHORITY
- LOVE US AND LEAVE US



Q26A: BUY CRAY TOMORROW?

RATING	% TOT.	# CASES
YES	97.3	36
NO	2.7	1
TOTAL	100	37

Q26B: WHY BUY FROM CRAY TOMORROW MORNING?

"HARDWARE WELL DESIGNED"

"COMPATIBILITY"

"NO ALTERNATIVE TODAY"

"DOLLAR FOR DOLLAR, CRAY IS BEST"

"BUT---------"

> "MY ANSWER MIGHT BE DIFFERENT A YEAR FROM NOW"
>
> "OUR SOFTWARE NEEDS MAY HELP CRI COMPETITION"

COMMENTS CONCERNING SOFTWARE

GOVERNMENT CUSTOMERS

"IMPROVE SOFTWARE"

"(CRI) SOFTWARE HELPS COMPETITION"

"REPEATEDLY SHIP SW. THAT DOESN'T WORK"

"IF WE HAD RELIED ON CRAY SOFTWARE,

WE WOULD HAVE BEEN MUCH

- FURTHER BEHIND"

"TAKEN CRAY A LONG TIME TO REALIZE THAT

SOFTWARE IS KEY TO THE ENVIRONMENT"

"IF CRAY SOFTWARE AS GOOD AS THEIR HW,

NO ONE COULD TOUCH THEM"

COMMENTS CONCERNING SOFTWARE

COMMERCIAL CUSTOMERS

"SOFTWARE IS NOT ROBUST"

"NOT AT SAME LEVEL AS OTHER VENDORS"

"NEED MORE FEATURES"

"ALL OUR FAULT FINDING WITH CRI
RELATES TO SOFTWARE"

"INSURE COMPATIBILITY BETWEEN OS LEVELS"

"SYSTEMS SW. DEVELOPMENT IS CRUCIAL"

"SYS. SW. FAILURE = OUR STRONGEST CONCERN"

"SOFTWARE IS CRAY'S WEAKNESS"

"CRI WANTS TO GET AWAY FROM SW."

"CRAY REALLY LACKING IN SYSTEMS SW."

DESIRED SOFTWARE FUNCTIONS

GOVERNMENT

- "MORE CTSS SUPPORT FROM CRAY"
- "HIGH PERFORMANCE FORTRAN COMPILER"

COMMERCIAL

- "QUALITY, PORTABILITY, ADEQUATE SECURITY, IMPROVED FUNCTIONALITY"
- "PROVIDE SMOOTH TRANSITION TO UNIX"
- "RESOURCE MANAGEMENT"
- "BETTER TAPE SOFTWARE"
- "MORE SW. PERFORMANCE MEASUREMENT TOOLS"

CRI SENIOR MANAGEMENT INTERACTION COMMENTS

"WANT MORE INFO ON WHAT CRI IS DOING"

"WOULD LIKE ANNUAL SITE VISIT"

"CRI EXECS SHOULD CIRCULATE MORE DURING CUG"

"HAVE ONLY SEEN 1 CRI EXEC IN 6 YEARS AT OUR SITE"

"WE GET ALL THE INTERACTION THAT WE WANT"

CRI HEADQUARTERS MANAGEMENT

- RESPONSIVE
- AVAILABLE
- TOO INFLEXIBLE REGARDS POLICIES
- SOMETIMES COME ACROSS AS ARROGANT

COMPARISON: GOVERNMENT VERSUS COMMERCIAL

ITEM	GOVERNMENT ATTITUDES	COMMERCIAL ATTITUDES
CRI IMAGE:	A CLASS ACT	NOT A CLASS ACT
STANDARD OF COMPARISON:	CDC, OTHER SUPERCOMPUTER VENDORS	IBM, DEC, JAPANESE
DECISION CRITERIA:	SPEED SOFTWARE	AVAILABILITY TOTAL NEEDS
SOFTWARE:	SUPPORT CTSS	SUPPORT PRODUCTION PROCESSING

TYPICAL ADJECTIVES USED BY RESPONDENTS

POSITIVE ADJECTIVES	NEGATIVE ADJECTIVES
CLASS COMPANY	SET IN WAYS
BEST KID ON BLOCK	ARROGANT
GREAT HARDWARE	POOR SOFTWARE
MAKING PROGRESS ON DEFICIENCIES	PROGRESS IS TOO SLOW

PERCEPTIONS OF CRI ATTITUDES/CHANGE NEEDED

CURRENT CRI ATTITUDES	CRI NEEDS TO CHANGE TO
MEETING EXPECTATIONS	MEETING TOTAL NEEDS
FIXING A PROBLEM	AVOIDING PROBLEM IN FIRST PLACE
POLICY-CLARIFICATION	CREATING BETTER ONES QUICKLY
WANTING TO HELP	MAKING IT HAPPEN
SCIENTIFIC LAB ORIENTED	RESPOND TO COMMERCIAL DIFFERENCES
HARDWARE ORIENTED	TOTAL SOLUTION ORIENTED

Q25: OTHER THINGS CRI COULD DO TO IMPROVE YOUR SATISFACTION

IBM-RELATED

"BE MORE REACTIVE TO IBM SOFTWARE CHANGES"

"BETTER INTERCONNECTION WITH IBM ENVIRONMENT"

SOFTWARE(GENERAL)

"SIGNFICANTLY STRENGTHEN COS"

"IMPROVE SOFTWARE DIAGNOSTICS"

HARDWARE (GENERAL)

"IMPROVE HARDWARE DIAGNOSTICS"

"IMPROVE RELIABILITY, EVEN IF HAS HARDWARE PENALTY"

TRAINING

"TRAIN PEOPLE BETTER"

OTHER COMMENTS

"REPEATEDLY CRI SHIPS SOFTWARE THAT DOESN'T WORK

"CRAY HAS SIGNIFICANTLY IMPROVED IN THE PAST YEAR"

"LIKE THAT CRAY IS OPEN ABOUT FUTURE PLANS"

"CRI TRYING HARD TO IMPROVE, BUT WE ARE FRUSTRATED PROGRESS IS SO SLOW"

"CRI SHOULD EXPLAIN ADVANTAGES OVER VECTOR BETTER TO SENIOR USER MGT."

"CRI HAS POTENTIAL WITHIN OUR COMPANY THAT CRI IS DISCOURAGING"

"GREAT HW., NEED TO WORK ON THE SW."

"HAVE MORE CONFIDENCE IN HARDWARE THAN IN SOFTWARE"

QUALITY AND PERFORMANCE STANDARDS

- QUALITY
  - DEFINITION IS CHANGING
    - NO LONGER = HARDWARE SPEED
    - NOW = HARDWARE/SOFTWARE
      - AVAILABILITY AND RELIABILITY

- CRI CURRENT QUALITY IS:
  - SUPERIOR TO IBM IN TERMS OF:
    - HARDWARE SPEED
  - INFERIOR TO IBM IN TERMS OF:
    - RELIABILITY
    - HARDWARE/SOFTWARE SUPPORT
    - SALES SUPPORT

CRI'S MARKET POSITION

- TO DATE: ONLY GAME IN TOWN
- VERY SOON: SIGNFICANT COMPETITION THAT HAS:
  - LESS FAST HARDWARE, BUT
    - MORE RELIABLE HARDWARE
    - BETTER SYSTEMS SOFTWARE
    - MORE FLEXIBLE BUSINESS POLICIES
    - BETTER END USER EMPATHY, SUPPORT

CUSTOMER ATTITUDES TOWARDS CRI

- WANT CRI TO SUCCEED
  - HAVE COMMITTED REPUTATIONS TO CRI
  - IMPRESSED BY PRODUCT'S CAPABILITIES

- ARE WORRIED THAT CRI IS:
  - -TOO COMMITTED TO HARDWARE SPEED
  - ARE UNDERESTIMATING MARKET APPEAL OF:
    - TOTAL PERFORMANCE
      - (HARDWARE+SOFTWARE+SUPPORT)
    - HUMBLENESS, RESPECT FOR CUSTOMER

CONSEQUENCES

USER EXPECTATIONS ARE INCREASING

CUSTOMERS WANT CRI TO PROSPER

BUT LOYALTY TO CRI WILL DIMINISH AS
COMPETITION GROWS

SUMMARY

CRI IS A VERY IMPRESSIVE COMPANY

BUT COMPETITIVE THREAT IS

GREATER THAN THEY REALIZE

CUSTOMERS' MAIN CONCERN IS THAT

CRI IS CHANGING TOO SLOWLY REGARDS:

- ROLE OF SOFTWARE

  REASONABLE POLICIES

  SUPPORT AFTER THE SALE

  RESPECT FOR THE CUSTOMER

RECOMMENDATIONS

CATEGORIES

BUSINESS STRATEGY

SOFTWARE

M

CUSTOMER SUP

GENERAL

RECOMMENDATIONS

BUSINESS STRATEGY

REDUCE IMAGE OF: WE ARE THE PREMIER HARDWARE PERFORMANCE VENDOR

INCREASE IMAGE OF: WE ARE THE PREMIER VENDOR FOR TOTAL COMPUTING SOLUTIONS FOR THE LARGE SCALE COMPUTING USER

CAREFULLY DEFINE RESPOND TO COMMERCIAL VS. GOVERNMENT DIFFERENCES

RECOMMENDATIONS

BUSINESS STRATEGY

- EXPLICITEDLY DEFINE THE TOTAL COMPUTING SOLUTIONS IN TERMS OF
    - ROLE OF CRI IN COMMERCIAL SHOPS
    - ROLE OF CRI IN IBM, DEC, ETC. WORLD
    - STRONG, LEADING EDGE SYS. SOFT.
    - ENHANCED I.S. AND END USER SUP.

RECOMMENDATIONS

MAKE SYSTEMS SOFTWARE QUALITY, QUANTITY

A TOP PRIORITY

- SOFT. NOW PERCEIVED AS AFTERTHOUGHT

- MAKE IT A MAJOR COMPETITIVE EDGE

- PROVIDE POWERFUL:
  - OS FUNCTIONS
  - LANGUAGES
  - APPL. DEV. TOOLS